

The seal of the State of South Dakota is a circular emblem with a serrated outer edge. Inside the circle, the words "STATE OF SOUTH DAKOTA" are written in a semi-circle at the top, and "GREAT SEAL" is written at the bottom. The year "1889" is at the very bottom. The center of the seal depicts a landscape with a river, a windmill, and a small settlement. A banner across the middle of the seal reads "UNDER GOD THE PEOPLE RULE".

# **STATEMENT OF BASIS**

## **Minor Air Quality Operating Permit**

**Wilson Trailer Sales  
Lennox, South Dakota**

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## 1.0 Operational Description

Wilson Trailer Sales in Lennox, South Dakota, manufactures gooseneck livestock and grain truck trailers from metal sheets and bars. Typical operations include cutting, welding, painting, and trailer assembly. Supporting operations include metal tools cleaning, paint gun cleaning, space heaters, and washing parts prior to painting. The primary Standard Industrial Classification (SIC) code is 3715 – Motor Vehicles and Motor Vehicle Equipment – Truck Trailers.

On November 22, 2010, Wilson Trailer Sales was issued an Air Quality Construction Permit (#28.3304-04-01C) by the South Dakota Department of Environment and Natural Resources (DENR) for a new spray paint line at the Lennox facility. The proposed spray paint line included two new spray booths and two new cure ovens. The facility also requested a facility wide volatile organic compound (VOC) limit of 95 tons per year, single hazardous air pollutant (HAP) limit of 9.5 tons per year and total HAP limit of 23.8 tons per year which was incorporated in the construction permit.

On February 14, 2011, DENR received an application from Wilson Trailer Sales to obtain a Minor Air Quality Operating Permit. The application stated that only one of the two proposed spray booths was installed at the Lennox facility; and plans were halted for the addition of the second booth.

### 1.1 Operating Equipment

Table 1-1 provides a description of the operating equipment at Wilson Trailer Sales.

**Table 1-1 – Operating Equipment Information**

Unit	Description	Maximum Operating Rate	Control Device
#1	2010 Custom Contrast Equipment Company paint booth with airless spray guns	4.69 gallon per hour	Swing Down Diffusions Media Blanket Filters

### 1.2 Insignificant Activities

Table 1-2 provides a description of the insignificant activities at Wilson Trailer Sales.

**Table 1-2 – Insignificant Activities Information**

Description	Maximum Operating Rate	Control Device
Powder Coat Cure Booth	1.65 MMBtus/hour	Not Applicable
(2) Cure Booths	3.2 MMBtus/hour	Not Applicable
(2) Hypertherm, HPR 130, Plasma Cutters	110 inches cut/hour	Baghouse

Each of the cure booths has a heat input capacity less than 3.5 million Btus per hour. In accordance with the Administrative Rules of South Dakota (ARSD) 74:36:04:03(5), a device or apparatus that has a heat input capability of not more than 3,500,000 Btus per hour is exempt from obtaining an air quality operating permit. Therefore, each cure booth is exempt from

permitting. The two Hypertherm plasma cutters are internally vented; therefore they are considered insignificant activities and are also exempt from permitting.

Other miscellaneous activities at the facility include a parts (tool) cleaner and welding operations. The potential emissions from the parts cleaner and welding operations are less than two tons per year. In accordance with ARSD 74:36:04:03(10), a unit that has the potential to emit two tons or less per year of any criteria pollutant before the application of control equipment is exempt from permitting. Therefore, the parts cleaner and welding operations are exempt from obtaining an air quality permit.

## **2.0 Compliance Demonstrated**

Permit condition 2.1 of air quality construction permit #28.3304-04-01C required Wilson Trailer Sales to commence construction within 18 months of the effective date of the air quality construction permit. The effective date of the construction permit was November 22, 2010. Wilson Trailer Sales submitted an initial startup notification on December 20, 2010, which demonstrated they began construction on December 2, 2010, and notified DENR of the initial startup date. The initial startup date was December 6, 2010. This notification satisfied permit condition 2.1, 4.2, and 4.3.

Permit condition 4.5 pertains to the calculation of the amount of criteria air pollutants Wilson Trailer Sales emits each month; and the subsequent submission of this data to DENR each calendar quarter as required in permit condition 4.6. Wilson Trailer Sales calculates their emissions on the amount of products used each month and the composition of the products based on the material safety data sheets. Wilson Trailer Sales has submitted three quarterly reports to DENR (one on January 19, 2011, and two on September 21, 2011) demonstrating compliance with the permit conditions. Once Wilson Trailer Sales has demonstrated compliance with the operational limits for one more consecutive quarter, Wilson Trailer Sales may change to an annual air emissions report if the 12-month rolling total is less than or equal to 80 percent of the appropriate criteria air pollutant limit.

Permit condition 5.1 pertains to a visibility limit of 20% opacity for Unit #1. This permit condition is generically written in minor air quality operating permits. The total particulate matter/particulate matter 10 microns in diameter or less, volatile organic compounds and hazardous air pollutants limits for Unit #1 identified in permit condition 5.3 and the associated recordkeeping and reporting requirements will also be included in the minor air quality operating permit.

Wilson Trailer Sales is required to demonstrate compliance with federal emission standards and operating requirements in chapter 7.0 of the air quality construction permit if they decide to use coating containing target hazardous air pollutants or paint stripping containing methylene chloride. DENR developed permit conditions if Wilson Trailer decides to use coating or paint strippers subject to the requirements of this chapter (e.g., 40 CFR Part 60 Subpart HHHHHH) and will incorporate these conditions into the minor air quality operating permit.

### 3.0 Potential Emissions

#### 3.1 Emission Factors

DENR uses stack test results to determine air emissions whenever stack test data is available from the source or a similar source. When stack test results are not available, DENR relies on manufacturing data, material balance, EPA's Compilation of Air Pollutant Emission Factors (AP-42, Fifth Edition, Volume 1) document, the applicant's application, or other methods to determine potential air emissions.

#### 3.2 Potential Emission Calculations

The potential emissions were calculated assuming the facility operates 24 hours a day, 365 days per year. Wilson Trailer Sales has stated the spray booth operations will have two spray guns with a maximum gun capacity of 4.69 gallons per hour per spray gun. Uncontrolled potential emissions are those that would occur with no emission controls. There is no pollution control equipment for volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) associated with the spray booth operations. Dry filter pads are used to control the paint overspray and particulate emissions (TSP and PM10). Therefore, the potential uncontrolled and controlled volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) emissions are equal. Wilson Trailer Sales has no previous actual emissions data for the spray booth operations; therefore, potential emissions were calculated using the highest possible emissions from the paints and paint thinners for each criteria pollutant, shown in Table 3-1.

**Table 3-1- Maximum Emissions from Spray Booth Operations**

Pollutant	Jet 95	PNT 10 Fast Lacquer	N33924 OEM Black	Corsol	SC79
	Max Solvent (lb/gal)	Max Solvent (lb/gal)	Max Paint (lb/gal)	Max Paint (lb/gal)	Max Paint (lb/gal)
TSP/PM10	0.2	1.0	3.7	6.9	4.9
VOC	8.0	5.8	4.3	0.6	3.4
HAP	0.0	1.9	0.2	0.0	0.6

As previously indicated, Wilson Trailer Sales has requested in their application to have enforceable facility wide emission limits for their criteria pollutants. DENR has agreed to enforce facility wide potential emissions limits for the criteria pollutants were derived from Equation 3-1 at 95% operational capacity, values are shown in Table 3-2.

#### **Equation 3-1 - Potential Emissions**

$$PotentialEmissions = 4.69 \left( \frac{gal}{hr} \right) \times 2(SprayGuns) \times MaxEmission \left( \frac{lb}{gal} \right) \times 8760 \left( \frac{hr}{yr} \right) \div 2000 \left( \frac{lbs}{ton} \right)$$

**Table 3-2 - Summary of Potential Emission Limits**

<b>Criteria Pollutants</b>	<b>Potential Facility Emission Range (tons/year)</b>	<b>Requested Emission Limits (tons/year)</b>
<b>TSP/PM10</b>	8-284	95
<b>VOC</b>	24-329	95
<b>Single HAP</b>	0-78	9.5
<b>Total HAP</b>	0-110	23.8

Table 3-2 shows the Wilson Trailer Sales' potential emission range by taking into account the highest and lowest potential emission values for the listed paints and solvents. Since the spray line is new to the facility, the facility requested facility wide emission limits of 95, 9.5, and 23.8 tons per year for total particulate matter/particulate matter 10 microns in diameter or less, volatile organic compounds, single hazardous air pollutants, and total hazardous air pollutants respectively. By calculating the range of potential emissions for criteria pollutants, DENR was able to determine that Wilson Trailer Sales has the ability to meet the facility wide requested emissions, and will most likely maintain actual emissions much lower than the requested emission limits.

## **4.0 Permit Requirements**

### **4.1 New Source Review**

ARSD 74:36:10:01 states that New Source Review (NSR) regulations apply to areas of the state which are designated as nonattainment pursuant to the Clean Air Act for any pollutant regulated under the Clean Air Act. Wilson Trailer Sales is located in Lennox, South Dakota, which is in attainment or unclassifiable for all the pollutants regulated under the Clean Air Act. Therefore, Wilson Trailer Sales is not subject to NSR review.

### **4.2 Prevention of Significant Deterioration**

Any stationary source which emits, or has the potential to emit, 250 tons per year or more of any air pollutant is considered a major source and subject to prevention of significant deterioration (PSD) requirements (ARSD 74:36:09 – 40 C.F.R. Part 52.21(b)(1)). Any stationary source which emits, or has the potential to emit, 100 tons per year or more of any air pollutant and is subject to one of the 28 named PSD source categories is subject to PSD requirements (ARSD 74:36:09 – 40 C.F.R. Part 52.21(b)(1)).

Wilson Trailer Sales does not meet the 250 tons per year threshold and is not one of the 28 named PSD source categories. Wilson Trailer Sales is considered a minor source under the PSD program and is not subject to PSD requirements.

### **4.3 New Source Performance Standards**

The department reviewed the new source performance standards (NSPS) and determined that Wilson Trailer Sales is not applicable to any NSPS at this time.

#### **4.4 Maximum Achievable Control Technology Standards**

The department reviewed the maximum achievable control technology (MACT) standards and determined that the following standards may be applicable: ARSD 74:36:08:37 – 40 CFR Part 63 Subpart HHHHHH - National Emission Standards for Paint Stripping and Miscellaneous Surface Coating Operations.

The National Emission Standards for Paint Stripping and Miscellaneous Surface Coating Operations is applicable to area sources that engage in any of the following:

- 1) Paint stripping operations that use Methylene Chloride (MeCl)- containing paint stripping formulations;
- 2) Spray application of coatings to motor vehicles and mobile equipment
- 3) Spray application of coatings to a plastic and/or metal substrate where the coatings contain compounds of Chromium (Cr), Lead (Pb), Manganese (Mn), Nickel (Ni), or Cadmium (Cd).

An area source is a facility that emits or has the potential to emit in the absence of controls, less than 10 tons/yr of a single hazardous air pollutant or less than 25 tons/yr of combined hazardous air pollutants.

Wilson Trailer Sales applies paint coatings by spraying to livestock and grain trailers. Wilson Trailer Sales application indicates that it will not use products that contain Methylene Chloride, Chromium (Cr), Lead (Pb), Manganese (Mn), Nickel (Ni), or Cadmium (Cd). However, Wilson Trailer Sales stated verbally that in the future they may use a product that contains one of these compounds. Therefore, Wilson Trailer Sales may be subject to 40 CFR Part 63 Subpart HHHHHH in the future.

In accordance with ARSD 74:36:08:108, as referenced to 40 CFR § 63.11170 the owner or operator may petition the Administrator for an exemption from 40 CFR 63 Subpart 6H if the facility can demonstrate, to the satisfaction of the Administrator, that the spray apply no coatings that contain the target hazardous air pollutants (Chromium, Lead, Manganese, Nickel, or Cadmium). Petitions must include a description of the coatings that the facility spray applies and certification that the facility does not spray apply any coatings containing the target hazardous air pollutants. Wilson Trailer Sales' application for an air quality construction permit satisfies this requirement.

If circumstances change such that the applicant intends to spray apply coatings containing the target hazardous air pollutants, the owner or operator must submit the initial notification as required by 40 CFR § 63.11175 and comply with the requirements of the subpart. As stated above, Wilson Trailer Sales indicated it may use coatings that contain target hazardous air pollutants. Therefore, Wilson Trailer Sales will be required to meet the applicable requirements if in the future they decide to use such coatings.

#### **4.5 State Air Emission Limits**

Total suspended particulate and sulfur dioxide emission limits are applicable to fuel burning units and process industry units. Wilson Trailer Sales' proposed unit is not a fuel burning unit or process industry unit; therefore Wilson Trailer Sales is not subject to the state total suspended particulate and sulfur dioxide emission limits.

Visible emissions are applicable to any unit that discharges to the ambient air. In accordance with ARSD 74:36:12, a facility may not discharge into the ambient air more than 20 percent opacity for all units. Wilson Trailer Sales must control the opacity at less than 20 percent for the proposed unit.

#### **4.6 Facility Wide Emission Limits**

For Wilson Trailer Sales to avoid the requirement to obtain a Title V air quality permit, Wilson Trailer Sales agreed to limit its emission to less than the Title V air quality permit thresholds. In accordance with ARSD 74:36:20:15(9), the owner or operator shall not emit greater than or equal to 9.5 tons of a single hazardous air pollutant, 23.8 tons of a combination of hazardous air pollutants, 95 tons per year of total particulate matter/particulate matter 10 microns in diameter or less, or 95 tons per year of volatile organic compounds from permitted units and fugitive sources per 12-month rolling period. The 12-month rolling total shall be calculated every month using that month's value and the previous 11 months' values. The 12-month rolling total shall continue from the previous construction permit 12-month rolling total.

#### **4.7 Coverage Under Minor Air Quality Permit**

A source operating in South Dakota that meets the definition of a minor source is required to obtain a minor air quality operating permit under the ARSD 74:36:04. A minor source is defined as any source with potential emissions less than 100 tons per year of a criteria pollutant and hazardous air pollutant emissions are less than 10 tons per year for a single hazardous air pollutant and less than 25 tons per year for a combination of hazardous air pollutants.

Since Wilson Trailer Sales is an area source that has the potential to emit less than 100 tons per year of a criteria pollutant and hazardous air pollutant emissions are less than 10 tons per year for a single hazardous air pollutant and less than 25 tons per year for a combination of hazardous air pollutants, Wilson Trailer Sales qualifies for the Minor Air Quality Operating Permit.

##### **4.7.1 Performance Tests**

In accordance with ARSD 74:36:11:02, the Secretary of DENR may require a stack performance test if necessary to demonstrate compliance with the state's emission limits. At this time, DENR does not believe a stack performance test is warranted for the existing boilers and oven that burn propane. However, permit conditions will be included in the draft permit that will allow DENR to require a stack performance test if DENR believes a stack performance test is necessary in the future to demonstrate compliance.

##### **4.7.2 Compliance Assurance Monitoring**



Compliance assurance monitoring is applicable to permit applications received on or after April 20, 1998, from major sources applying for an air quality permit. Wilson Trailer Sales' application was received after April 20, 1998. However, Wilson Trailer Sales is requesting a minor air quality operating permit. Therefore, compliance assurance monitoring is not applicable.

#### **4.7.3 Periodic Monitoring**

Periodic monitoring is required for each emission unit that is subject to an applicable requirement at a source subject to Title V of the Federal Clean Air Act. Wilson Trailer Sales has requested federally enforceable limits be placed on the operations. The federally enforceable limits will classify Wilson Trailer Sales as a minor source. A minor source is not subject to periodic monitoring.

Wilson Trailer Sales will be required to maintain records of the coatings/paint used at the facility and to determine HAP emissions based on the chemical composition of the coatings/paint. This information will be required on a monthly basis and reported to DENR on a periodic basis.

#### **4.8 Summary of Applicable Requirements**

Any source operating in South Dakota that meets the requirements of the Administrative Rules of South Dakota (ARSD) 74:36:05:03 is required to obtain a Title V air quality permit. However, placing enforceable operational restrictions in the permit will limit Wilson Trailer Sales TSP/PM10, VOC and HAP emissions below the major source threshold under the Title V air quality permitting program. Therefore, Wilson Trailer Sales will be required to operate within the requirements stipulated in the following regulations under the minor air quality permit program:

- ARSD 74:36:04 - Minor Operating Permits;
- ARSD 74:36:06 - Regulated Air Pollutant Emissions;
- ARSD 74:36:08:37 – 40 CFR Part 63 Subpart HHHHHH - National Emission Standards for Paint Stripping and Miscellaneous Surface Coating Operations;
- ARSD 74:36:11 - Stack Performance Testing; and
- ARSD 74:36:12 - Control of Visible Emissions.

#### **5.0 RECOMMENDATION**

Based on information DENR received in the permit application, DENR recommends approval of a minor air quality operating permit for Wilson Trailer Sales in Lennox, South Dakota. Any questions on this review should be directed to Marc Macy, Engineer III, with the Department of Environment and Natural Resources.